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## AGRICULTURE THE BASIS OF EDUCATION.

THAT agriculture furnishes the material basis for civilization has long been recognized, but we continue to forget that it is no less truly the basis of intellectual and social development. By no system or method of formal education can children confined to city houses, door-steps, paved streets and schools, be brought to their full mental stature; the chances are even smaller than that their bodies will develop fully under these unnatural conditions. There is no substitute for direct contacts with nature and with the parent generation on the intellectual side, any more than on the physical.

Plants and animals grow up, each according to its own kind, endowed by heredity with the tendencies and instincts of its species. Only our own offspring and the animals which we have subdued and domesticated are objects of educational efforts. With the animals we use better judgment than with the children, for we do not expect that education can supply the deficiencies of adverse conditions during the earlier stages of existence. We do not hope by later training to make a prize-winner of a stall-raised, stumbling, half-blind colt. We have learned some ways in which it is safe to assist or to supplement nature, but no safe ways to antagonize or to supplant nature. Education has no creative power in itself, as a machine of institutions and methods, but has true

value only when it adds something to the results of natural growth.

Interest is intellectual appetite. It is the index of the mind's readiness for the assimilation of knowledge. Formal instruction does not arouse interest in nature and in human activities, but can speedily deaden and destroy it, especially if the brain be fermenting already with other undigested materials. Minds are weakened by this scholastic dyspepsia, just as bodies would be if all athletes were required to weigh 200 pounds. Subsequent exercise in the world of concrete realities may reduce these mental drop-sies, but usually a permanent handicap of ineptitude remains. It is as though the horse-breeders were to follow the methods of the hog-raisers, or as though the system of producing fat-livered geese were applied to game-cocks or to carrier-pigeons. Education means greater power of action, not mere plethora of erudition. The monastic and scholastic traditions do not contain the true or final ideals. Education is a biological subject, a part of life, and must continue to change as life changes, unless it is to hamper or destroy. Endowed systems of education may prove as dangerous to human progress as endowed institutions of religion, if they train the young to face the past instead of the future.

More fundamental than all questions of subject-matter and methods of formal education are the two primal contacts of the child, with nature and with the parents. To weaken these contacts is to impair the conditions of normal development, the basis on which all more specialized forms of training must rest. Association with contemporaries, and technical instruction in literature, sciences and arts, have legitimate positions in the educational superstructure, but they can not replace defective foundations.

The actual labor of farming may not have an educational superiority over many other vocations, except for

the greater variety and the more numerous contacts with nature. The farmer who limits his interest to cows or cabbages, to make a little more money, has missed his calling—he should move to town and become a plumber. Work of any kind may be carried to excess, weariness and disgust. Among the Hindus the son regularly takes up his father's occupation, but we are approaching the other extreme. Few people in our cities are sufficiently contented with their work to wish their sons to follow them, which is another cause of weaker contacts between the generations. Many other productive arts could be combined very well with agriculture if the importance of this were adequately realized, but humanity still rates itself cheaper than machinery. People huddle themselves in squalor, to work night and day, lest the precious machines be idle or yield a smaller percentage on the investment. Slum competition restricts the industrial activity of the farm-dwelling part of the community, but other tendencies are now appearing which may bring important advantages to the farm and lessen the unfortunate attractions of the city.

It is not strange that there should be many efforts to avoid by educational means the deterioration which overtakes the populations of cities and towns. Some of these reforms may be good in themselves, or at least better than others, but they all have the dangerous tendency to conceal the main issues and thus to interfere with right action, even by those who consider the welfare of their children as not merely incidental to other interests, financial or social. Every year thousands of devoted parents move to towns and cities in the mistaken belief that they will benefit their children by sending them to larger and more specialized schools. They often leave behind much more truly educational conditions than any they can find in the cities.

The physical and moral degeneracy of city populations

has long been recognized, but the intellectual deterioration and its equally inevitable causes are generally overlooked. Education has become a cult, and even a superstition. There is widespread dissatisfaction with the actual results of the schools, but everywhere the same confident hope that some new jugglery of educational fads is about to protect the younger children, at least, against the evil estate to which parental folly continues to expose them. Burnt children avoid fire, but disappointed parents find no alternatives.

The mental conditions of agriculture are just as essential to the normal development of the human mind as air, food and exercise for the development of the body. Nature is highly complex, and also exceedingly fine-grained; it is only in contact with this multiplicity of fine-grained facts of nature that fine-grained perceptions are developed by the child. Sensitive feelings there may be, and even super-sensitive, without such contact, just as vegetables in the cellar may send out stems much longer than in the garden, though pale and spindling. Human culture, when set apart from nature, is only a hothouse plant, unable to maintain, justify, or enjoy its own existence. Much less does it furnish a true basis of judgment in the study of the general problems of human development.

The education of the children of city and town populations is truly a humanitarian task of vast proportions. City schools, no less than asylums and jails, are charitable and disciplinary institutions required by the community for the care of the superfluous and troublesome elements of the population. The worse the home conditions, the better, by contrast, are the schools, but this does not prove that schools can supply a complete education, or even its most important elements. Children are obviously out of place in cities. Flat-owners who refuse children as tenants might justify their course by motives of true philanthropy, and

set a good example for the shops, factories and schools. The city school is often only an educational sweat-shop. The slum children are receiving all the pity, but well-to-do parents are committing the same unconscious crimes without the excuse of poverty. Some methods of education may retard more than others the inevitable degeneration, but there is no reason to suppose that even the most complete and elaborate of formal systems can counteract the effects of shutting children away from nature and from their parents during the years when the senses are susceptible of their most rapid and permanent progress.

The attempt has often been made, though never with conspicuous success, to graft agriculture and other natural sciences into scholastic courses of study, but formal learning leads away from nature rather than toward it. Educational systems tend always to prefer formulated knowledge, for this avoids the endless difficulty of preserving connections with concrete facts. Such freedom from practical contacts was what was originally meant by "liberal education," the education of the free, who did not have to work, as distinguished from the technical training of servile mechanics and artisans.

Nature has not been formulated, and never will be, for each species of plants and animals is following its own separate pathway of evolution. There are no general laws or principles of botany, zoology or agriculture. The characters and habits of the different kinds of plants and animals are as arbitrary as the grammatical rules of the different languages, and with the same multiplicity of exceptions. To formulate nature is as hopeless as the writing of general rules of grammar to apply to all languages. Some even deny that knowledge of nature, agriculture or language is really science, because no general laws are available for purposes of formal instruction.

It is generally agreed that the complete mastery of a

foreign language is seldom possible if the undertaking be deferred to maturity. Particular muscles, nerves and brain-cells are developed, according to students of speech, to form particular sounds, and these are not readily added or adapted in the adult anatomy. The multifarious agricultural contacts with nature are similar; unless supplied in childhood and youth they seem to find no adequate entrance or function in the mind. This may account for the wide differences of standpoints and methods of thought between country and city people. The farmer may assimilate himself to the city, but the city-bred man, even with the most bucolic intentions, very seldom comes to be more than an "agriculturist." It usually requires two generations to fully shake off the bondage of the city, and the feat is seldom accomplished.

If the ability to learn languages be well exercised during childhood and youth a large measure of it can usually be retained in maturity, and even in old age. Powers of perception, if allowed to develop in the early years, need not be lost in the later; but formal education often relegates the perceptive talents to a long period of disuse while attempting to bring the rational faculties to a precocious expansion.

The mind of childhood, rather than that of later youth or manhood, is adapted to absorb the vast number and complexity of details with which all nature contacts abound. Not to have these contacts at the right time of life is to be always out of joint with the terrestrial environment—to remain a transient boarder and never completely qualify as a true inhabitant of the earth. Erudition, skill, and even leadership, may be acquired by those who lack these primal contacts, but their minds are without adequate backgrounds, their thinking essentially superficial, and their ideals vain and sterile. It would be strange, indeed, if people of great natural ability did not abound in

cities, for city populations are continually recruited from the most capable people from the country. Cities have the best of the human material, but they spoil it in the making, and must continue to import rural talent to make good the deterioration.

The need of rehearsing these well-known facts becomes more acutely apparent with each new suggestion of an improved method or detail of formal instruction. That there is somewhere a fundamental deficiency with our theories and systems of education is widely appreciated, and reforms are being attempted in many directions. Thus Mr. Arthur Somervell has argued with much force that the deficiencies of modern education are to be explained by the lack of adequate musical training.\* Judged by their artistic results, the Greek methods of education are shown to have been much more efficient than ours. This is ascribed to the fact that music, the primary element with the Greeks, has been neglected or omitted altogether in modern systems. Language and mathematics constituted our so-called "classical education" before the demands of science secured recognition and diminished still farther the time available for musical training.

This claim of fundamental educational importance is not made, of course, for music in the modern, narrowly technical sense, but as including all forms of training of the sensibilities of rhythm and proportion. In spite of many difficulties of expression, an excellent argument is developed to show that such esthetic training may have an important function in aiding the development of truly enlightened judgment, both personal and national. The Japanese are cited as a modern instance of the efficiency of a nation with a universal musical training. England is also contrasted with the more progressive modern Ger-

\* Arthur Somervell, "Music as a Factor in National Life." *Monthly Review*, May, 1905.

many, where English dramatic poetry is used more extensively than at home.

With the Greeks music seems to have included all forms of rhythmic activity and expression, but moderns have made music something very different. It is no longer primarily a form, method or accompaniment of activity or expression, but a substitute for activity and expression. Instead of a stimulant, it has become a narcotic. Its crowning and most consistent development is the musical box, which helps us to do nothing and think of nothing. The ancient music had important functions, like the sacrifices and incense which youths burned before the shrines of their gods and heroes, resolving to emulate their warlike virtues. Our modern youths burn their incense in the form of cigarettes, and thus secure contentment without the need of effort. Incense and music have uses as long as they contribute to beneficial forms of activity, but may become worse than useless when treated as objects of gratification in themselves.

Such by-paths of barren specializations of normal powers and activities are frequent along the whole course of human development. A man with normal taste for food and drink may degenerate into a glutton, a gourmet, or an inebriate. The instincts which lie at the basis of the family and the preservation and development of the race are likewise capable of endless perversions. Every taste or talent can be prostituted and sterilized in one way or another, even including arts, sciences and religions. There is no salvation in any of those things, of and by itself, unless they lead toward development. Music which has no relation to useful activity is unprofitable and decadent. It may afford a relatively harmless antidote or diluent of more injurious perversions, but it will not build our civilization nor regenerate our society.

The value of the musical training advocated by Mr.

Somervell appears to lie not only in the better development of the esthetic faculties, but in the enlargement of the powers of expression. Rhythmical methods of expression are actually the most efficient methods. Mr. Somervell cites Elizabethan England, the "nest of singing birds," as an example of the practical benefit of "the great imaginative training on which all right education should be built up." It is in these periods of literary climax that the world's accumulated experience is brought into the clearest expression.

By musical training it is hoped to correct the lack of imagination which Mr. Somervell perceives to be a very serious deficiency. But there must be materials of imagination as well as methods of encouraging activity of imagination. The imagination which is the worthy object of educational solicitude is not mere vagrant fancy, but the power of the mind to reproduce, combine, compare and elaborate the data of previous experience. Effective imagination is as impossible without clear perception as vision without light. To imagine clearly is to see things in right relations. To perceive dimly and imagine vaguely is to have a bog under foot and a fog overhead. Truth appears stranger than fiction, because fiction is our usual state, truth a rare illumination.

The Greek child appears to have obtained the matter as well as the method of imagination from the close and accurate perception of facts of nature, family life and physical training, as well as from "the traditional tales of his race," most notably, of course, from the vivid perceptions of the poems of Homer. These unique prehistoric compositions attained wide popular appreciation while the Greeks were still simple farmers, and before they had become acquainted with the arts of writing and of formal education. We are well warned, therefore, that the supreme beauty and efficiency of the Greek mind was developed under con-

ditions widely removed from our modern ideals of education, and also far different from those of the already degenerate Athens of Socrates and Plato.

Educated Greeks of the Socratic period were much more interested in the framing of theories of beauty and morality than they were in the practice of these arts. Three centuries later, in the times of Plutarch, Greek gentlemen still affected to admire statuary, but could no longer understand how the carving of statues could be a pleasure. Homer, on the other hand, represents Ulysses as quite as proud of his skill in plowing a furrow or in building a bed as of his exploits as warrior and navigator. The charm of the Homeric age is that men saw the world clearly, and took pleasure in the seeing. They were still as gods, for life and its activities were a joy to them. Nor is this spirit altogether departed from the world. Echoes still linger on our Western prairies and other frontiers of civilization where the children have not heard the doctrine of the overworked school-mistress that "all learning is painful."

The Greek theory of formal education was one of the products of the Greek genius, instead of having produced that genius. Moreover, the theory was a failure, for it did not save the Greek civilization, and may even have hastened its degeneration. Greek culture blossomed into artistic expression very rapidly, and deteriorated with equal promptness. Pisistratus, who collected the poems of Homer from the rhapsodists or professional memorizers, and reduced them to writing, died only sixty years before Socrates was born, and only a hundred years before Plato. Pythagoras and the natural philosophers, more truly scientific than Plato, came earlier, some of them well back toward the uncertain antiquity of the Homeric age, before written language and formal education began to be cults, or objects of value and excellence in themselves. Plato seems to have done more than any other one man to tie

the human intellect fast in the net of deductive logic, in which it still remains very much entangled. Reasoning from generalized abstractions instead of from clearly formed concepts is still frequently attempted, even in the concrete physical sciences.\*

We may not hope to solve the problems of education, any more than those of politics or religion, by turning the centuries back. Ideals are vain which do not enable us to see possibilities of beauty in our own time and in the future, and not merely in a lost antiquity. Science, though it dispels myths, can furnish a wealth of materials for the enrichment of the imagination—far beyond the dreams of the Homeric or any other age. But who shall bring these conceptions into clear expression, and make them the objects of living interest and youthful ambition?

"The study of science can undoubtedly serve to draw out in the student a perception of the rhythm and unity of things, and where there is even a touch of the true scientific imagination, it must reach heights of which the ordinary man can have no conception. But if, as is frequently urged, scientific training is substituted in early years almost entirely for art and language, it seems to me there is one serious risk. The purely intellectual and unimaginative scientist is far commoner—strange as it may seem—than the purely intellectual and unimaginative artist; and a purely intellectual interest in science is so much more easily aroused in a child, than a purely intellectual interest in music, painting, or poetry, that a child so taught, may wander for years in a dry desert of fact."

\* "For in Greece the development of thought reverses the direction taken in all other nations. It begins apparently where the others end, and it ends where the others begin. Broadly viewed, the movement of Greek thought is from science to theology, or rather theosophy; elsewhere it starts from theology and struggles towards science. The emancipation from the theological preoccupations, with which the scientific philosophy of the Ionians appears to have started, is an extraordinary and unique phenomenon. In Egypt, in Babylonia, in India, reflection never frees itself from the fascinations of religious speculation. . . ." Schiller, F. C. S., 1906. "Plato and His Predecessors," *The Quarterly Review*, 204: 70.

Mr. Somervell might have added that there is no part of the field of education in which the lack of a developed imagination becomes so painfully evident as in science itself. Unimaginative scientists there may be, but they are not very intellectual, nor very scientific. Scientific erudition is often as barren and unprogressive as any other formal learning. Imagination is required in science, not only to project new theories, but to enable us to perceive and readjust ourselves to new facts. If such readjustments could be made promptly the progress of science would be much more rapid than it is, particularly in the biological sciences where many of the most important facts have to be learned inferentially. Darwin's doctrine of evolution was rejected by Owen and Agassiz, probably the two men in all the world who knew the most facts in its favor and could have given it the strongest and most effective support. And in matters of less general interest the same phenomenon is encountered. A theory-subverting fact or an improved classification may not be admitted by the contemporaries of its discoverer, but often waits until later generations have grown up, to whom the idea does not come as new, and thus makes less demand for a reconstructive imagination.

Failure to appreciate the discoveries of others limits scientific originality, for every new fact may serve in turn as the standpoint of further discovery. Ambition of discovery blinds the eyes of the perverse originalist. Science is advanced by a lively interest and a clear apprehension of the facts, without particular regard to novelty. The idea that young men can be trained to become scientific investigators is largely fallacious. If they are not investigators during the period of training, they do not become investigators afterward. We have but to preserve and develop the normal curiosity of the child, for of such is the republic of science.

We want what the Greeks had, and something more; and not the educational methods merely, but the reasons for them, clearly understood and reduced to definite expression, so that the race may not again lose the pathway which leads to the development of its higher powers. Many civilizations have grown up, but none has yet emerged into the light of full consciousness, so that it knows where its strength lies and how to maintain itself on the pathway toward further progress. This is the central problem of expression, to which all others are merely preparations and accessories. In the broadest sense it is an educational problem, for that race best assures its existence which best provides for the full development of the successive generations.

To break the physical contacts of the home so that the children are not nourished, sheltered, clothed and washed, but condemned to squalor and overwork, is generally appreciated as a crime, but it is no less definitely injurious to deprive the children of other parts of their post-natal inheritance, the accumulated experience of the race, which can be transmitted only through adequate associations between the generations. It is not enough that normal babies be born, and that children have pure air, wholesome food and adequate exercise, so that their bodies attain normal physical development. Even when these material conditions are supplied they carry the young only to the status of savages, unless effective contacts with the older members of the community are maintained.

The human species differs from all others in that the parental instincts are not temporary, but continue to strengthen with age. It is often not the parents themselves, but the grandparents, who supply the widest experience and the most sympathetic relations, especially with the younger children. The importance in human evolution of this overlapping of the generations becomes

very obvious among primitive peoples, who often marry young, before the parental instincts are strongly developed. The care of the children devolves largely on the grandparents, leaving the active members of the community more free for labor or the chase. While the social systems of savages are not always to be accepted as models for civilized man, there can be little doubt that civilization is losing much through the waste of grandparental instincts involved in our selfish individualism and our blind faith in formal education.

It is only in agricultural communities that these necessary contacts with nature and between the successive generations are well assured; just as it is only in agricultural societies that civilizations are developed and maintained. As soon as the more capable elements of a race pass definitely away from the agricultural status and become urban parasites, the deterioration of its civilization begins.

Behind the Athens of schools and theories of education was the life of the "Heroic Age," when the Greek race developed its unrivaled excellence of taste and talent, so that it could borrow letters and other foreign arts and promptly refine them into patterns of excellence for all succeeding ages. What was the life of the Greeks, and of Greek boys and girls during this pre-scholastic period? The educationists have not told us about this—probably they are not interested. It has not occurred to them that the decline of Greek life could have any possible connection with the attainment of that degree of wealth and culture which betrayed the Athenians to resign the care of their children to slaves and pedagogues, grammarians and rhetoricians.

We have taken too seriously this outer shell of the Greek culture, just as the African savage imagines that he is civilized as soon as he has covered his skin with a suit of filth-accumulating clothes. Men who clearly owe their

success in life to free contacts with nature and with their fellows, regularly make use of their wealth to deprive their children of any similar opportunities of development. If the young people are diligent and tractable they are kept in schools for twenty years or more, in the complacent belief that only in this way can the full parental duty be performed, so great is our blind and superstitious faith in formal education.

Great men of all the ages have commended solitude as one of the most important of educational factors. A mind unable to support its own existence and follow its own interests without external direction or compulsion is either of inferior quality, or lacking in development. And yet what proportion of our normal and naturally capable young people become self-acting or attain to self-knowledge? Solitude can not be provided on the factory system, and educators have ceased to consider it, despite all the opinions of saints and sages. Policies of educational centralization are driving the lambs in larger and larger flocks, and would allow only the maimed or the incapable to wander alone and come into direct relations with their environment.

It is true that solitude and nature contacts are not enough. Human associations there must also be, if a worthy picture is to be painted on the background which nature can prepare. Farm life is often not merely rude, but sordid, and very unfavorable for the continued development of the higher human qualities. But this barbarism still lingers among us largely because we have relied too much on formal education, instead of perfecting the other arts of life. As schools are now, the development of talent in the country lad, instead of qualifying him to work an improvement in the home community, usually makes him only an easier recruit for the sterile and degenerate existence of the city.

The school has become an agent of social disorganization, weakening the contacts between successive generations. The boy spends his time with his undeveloped contemporaries, instead of with his experienced elders. "Send your son to college and the boys will educate him," was Emerson's assurance, but the chances are that they will only qualify him as a member of their own premature and reactionary social organization, occupying his mind with fraternity or institutional interests, rather than with truly human points of view. The Athenian educational industry did not develop to the modern factory system; it reached only the shop stage. Nevertheless, the conditions of childhood and youth were already markedly different from those of the earlier and more strictly agricultural period, when perceptions of nature were so scientifically sensitive, accurate and affectionate. Instead of having less scientific training than the modern child, the young Greek of the Homeric age appears to have had much more intimate and adequate contacts with nature and with his elders than our modern system of education provides, or even permits.

If this curtain of primitive life could be raised we would doubtless find some strange and unexpected things. How many of our school-boys know the varieties of domestic fruits, and what are their characters and qualities? Fruits, even to most farmers, are merely a commodity, something to eat and to sell. Farmers from Maine to California have planted their orchards with inferior sorts because their urban customers have lost a discriminating knowledge of varieties, and now buy fruits mostly from size and external appearance.

Even boys and girls on the farm often fail to learn the varieties which the home acres produce. The children are too busy going to school, and the fathers too busy earning the money to send them. Knowledge of varieties

of domestic fruits is not considered in schools, except for courses in pomology in a few agricultural institutions. And yet it is just such knowledge, practical, detailed, and truly scientific, which Homer represents as the most vivid recollection of childhood, rehearsed by the returning hero Ulysses to his aged father, to prove himself the long-lost son.

“Yet again, if thou wilt, I will tell thee the trees the  
orchard through  
Which thou gavest to me long ago, when I asked thee of  
all things there,  
The lad running after thy steps through the garden every-  
where:  
And we passed through the selfsame trees: thou didst  
tell me the names of them then.  
Ten apple-trees gavest thou me, and pear-trees three and  
ten,  
And fig-trees forty; and fifty rows of the vine didst thou  
name,  
Saying ‘These do I give thee’—the ripening season of none  
was the same.  
And of manifold kind are the clusters that hang on the  
branches thereof,  
When the seasons with sunshine and rain beat down in  
their strength from above.”\*

The conditions of agricultural life in early Greek times provided these adequate and sympathetic contacts between the generations. They supplied a truly scientific basis for the unique perfection of classical culture and art. Our modern theories and practices of formal education ignore these necessary contacts, and deceive us with the vain hope that normal human development can be attained without them.

Ideal education is the condition in which there is full

\* Arthur S. Way, *The Odyssey of Homer*, 1904, Book XXIV, p. 317.

development of human powers and talents, of body, mind, and spirit, or of hand, head and heart, as the popular alliteration has it. Education is not, primarily, a matter of schools and systems of formal instruction, but of maintaining the contacts with nature and with the preceding generations. Institutions which weaken these contacts are not truly educational, but have the contrary effect of arresting the development, both of the individual and of the race.

O. F. Cook.

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